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3D Bumper Animation Design as a Visual Identity Media for Wanarata Fest in Karangmangu Village

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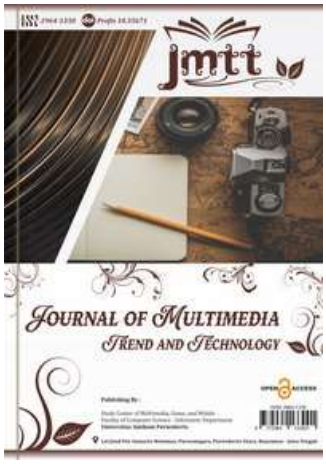

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ABSTRACT

Wanarata Fest is a cultural event held in Karangmangu Village with the aim of introducing the potential of local culture and wisdom to the wider community. To support the delivery of the village's identity and potential, visual media are needed that can create a strong and representative first impression. This research aims to design a 3D bumper animation as a visual identity for Wanarata Fest, showcasing the cultural elements and character of Karangmangu Village. The method used in this research is the Multimedia Development Life Cycle (MDLC), which includes the stages of concept, design, material collection, assembly, and testing. During the design stage, the selection of visual elements such as gunungan wayang (wayang puppet mountains), kuda kepang (horse-drawn carriages), joglo houses, and teak trees was based on observations and interviews with village officials to represent local cultural identity. Testing was conducted using the User Acceptance Testing (UAT) method, involving the committee and village officials as respondents. The test results showed that the 3D bumper animation received very positive ratings and acceptance, with all assessment indicators falling within the "very appropriate" category. This demonstrates that the designed 3D bumper animation is capable of representing the visual identity of Wanarata Fest and is suitable for use as an opening media for the event, with the potential for reuse in future events. Thus, 3D bumper animation can be an effective visual media solution in supporting the image and identity of local culture-based events.

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INTRODUCTION

Animation is a form of visual communication that utilizes a series of still images displayed sequentially to create the illusion of movement. Animation is the process of bringing objects or images to life through visual manipulation, allowing objects that were initially static to appear to move and interact [1]. In visual design studies, animation not only functions as a medium for entertainment but also plays a strategic role as a more engaging, effective, and communicative medium for conveying messages because it is able to combine visual elements, movement, rhythm, and sound into a single form of communication [2]. In general, animation can be distinguished based on its production and visualization techniques. Animation types are grouped into three: stop motion animation, traditional animation, and computer graphic animation [3]. Over time, computer graphic animation has become the most dominant technique used in the modern creative industry due to its flexibility, ability to produce high visual detail, and ease of editing and rendering [5]. This technique includes 2D animation and 3D animation, both of which utilize computer software and systems to produce smooth and controlled visual movement [2][6].

Today's digital technology advancements often involve visual media as one of the most effective communication tools to capture public attention. One form of visual media experiencing rapid development is 3D animation, as it is capable of displaying more realistic, dynamic, and highly engaging visuals than two-dimensional animation. Through 3D animation, messages can be conveyed more expressively, realistically, and more easily remembered by viewers [7]. One application of this technology frequently used in the digital world is animated bumpers, short video clips that serve as visual identities and event openings [8].

Ideally, a cultural event that is held sustainably should have a professional, consistent, and easily recognizable visual identity. Visual identity serves as a representation of the event's character as well as the main communication medium to the audience [9]. Cultural events that have a strong visual identity generally apply visual elements such as logos, colors, typography, and design styles consistently across all publication media, thereby building a professional image and expanding promotional reach [9][10]. One example of a cultural event that has implemented a strong visual identity is the Dieng Culture Festival (DCF). Research on the design of the DCF visual identity shows that this festival consciously builds a consistent and sustainable visual identity, thereby increasing the attractiveness of the event and strengthening the image of cultural events at the national level [11][12].

Animated bumpers are short video clips lasting around 5–30 seconds that serve as openings, closings, or segment dividers in a program. Bumpers are designed to strengthen the program's visual identity through a combination of graphic elements, typography, color, motion, and audio arranged in a concise but effective manner [13]. In television bumper design analysis, bumpers must be able to convey the program's character concisely, consistently, and easily remembered. Commonly used visual elements include illustrations, color compositions, transition effects, and musical rhythms or sound effects that support the program's atmosphere [14][15]. With their short duration and focus on visual identity, animated bumpers are widely used as branding and transition elements in digital and broadcast media.

Karangmangu Village, located in Kroya District, Cilacap Regency, is one of the villages actively developing local potential through community-based activities. This potential development is carried out by utilizing the natural wealth, culture, and creativity of the community as the main attraction. One form of this development is realized through the Wanarata Fest, an annual cultural event held continuously and serving as a means of promoting the culture, tourism, and creative economy of Karangmangu Village. These issues highlight the need for innovative visual media that can strengthen the event's identity and enhance the promotional appeal of Wanarata Fest. One solution proposed in this research is the design of 3D animated bumpers as the event's visual identity. 3D animated bumpers were chosen because they provide dynamic, modern, and memorable visuals, and can be reused repeatedly at every Wanarata Fest event. By implementing 3D animated bumpers, it is hoped that the event's visual presentation will no longer be monotonous but will instead possess a consistent and professional visual character.

The innovation in this research lies in the design of 3D animated bumpers as the visual identity

of local cultural events, designed for reusability. Unlike conventional promotional media, which are typically single-use, this research emphasizes the development of 3D animated bumpers that can be reused at every event with minimal adjustments. This approach is expected to support promotional efficiency and serve as a model for sustainable visual identity development for village-level cultural events. In general, this research aims to produce 3D bumper animation as a visual identity media that can strengthen the image of Wanarata Fest in Karangmangu Village. More specifically, the purpose of this research is to produce innovation in the form of applying 3D bumper animation as a visual identity media, as an alternative to the static visual media previously used, in order to strengthen the cultural character and support the professionalism of the Wanarata Fest event. Then develop a 3D animated bumper design that has a flexible visual structure so that it has the potential to be reused or developed in future Wanarata Fest events.

METHOD

A. Research Model and Concept

This research was conducted in Karangmangu Village, Kroya District, Cilacap Regency, Central Java. This location was chosen because Karangmangu Village is the venue for Wanarata Fest, an annual festival that culminates in the celebration of Indonesian Independence Day. This festival showcases the village's arts, culture, and local potential, necessitating a strong and compelling visual identity. This research was conducted for approximately five months, from June 2025 to December 2025.

This research uses a qualitative method, meaning that qualitative research is used to examine phenomena that are complex, holistic, dynamic, and full of meaning, so that they cannot be explained through numbers or structured instruments such as in quantitative research [16]. This research uses a qualitative approach because its main objective is to understand the needs of visual media, the character of cultural identity, and promotional problems that occur in the implementation of Wanarata Fest in Karangmangu Village. Qualitative data collection was carried out in natural settings, utilizing complementary observation, interview, and documentation methods.

This research concept is structured as a flowchart for the design process of the 3D animated bumper for Wanarata Fest. The framework outlines the research stages, starting with problem identification and ending with the final product, the 3D animated bumper. This flowchart ensures the research process is systematic, structured, and aligned with previously identified needs. Broadly speaking, this research progresses through problem identification, data collection, design needs analysis, and model development using the Multimedia Development Life Cycle (MDLC) method, resulting in a final product ready for use as the event's visual identity. The research flowchart is illustrated in the following flowchart.

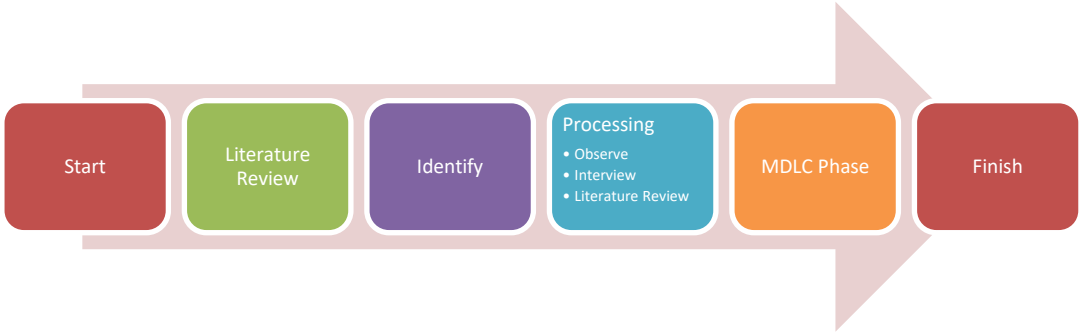


Figure 1. Flow chart

B. Concept

The concept stage serves to formulate the purpose of creating the animation, the characteristics of the audience, and the visual message to be conveyed. The concept stage must be developed first because it is the "common thread" of all subsequent phases [17]. In the concept stage, this research will determine the purpose, visual message, and animation concept to be used. The planned concept is a combination of traditional and modern elements by showcasing the cultural elements of

Karangmangu Village. In addition, the animation will be short, less than one minute, to be effective as an opening event.

C. Material collection

The concept stage serves to formulate the animation's purpose, audience characteristics, and the desired visual message. The concept stage must be developed first, as it serves as the "common thread" for all subsequent phases [19]. The design stage includes storyboarding, animation flow, color composition, typography, and scene layout. This stage determines the visual structure before the animation is produced [18][20]. In this study, design includes:

a. animated bumper storyboard
b. visual moodboard creation
c. asset and scene sketches
d. visual bumper rhythm setting

D. Assembly

This stage is the core process of creating a 3D animated bumper, including:

a. object modeling,
b. texturing,
c. motion animation,
d. lighting,
e. rendering,
f. compositing.

In the MDLC modification journal, the assembly stage is the main construction phase, where all multimedia assets are assembled into the final product.

E. Testing

The testing method used in this study was User Acceptance Testing (UAT). UAT is a stage in system testing that aims to determine the extent to which a product is accepted by end users based on their needs and expectations. This testing involves direct users to assess the functionality, comfort, and suitability of the product being developed [20]. In this study, UAT was conducted with respondents selected using an accidental sampling technique. These included Karangmangu Village officials and the Wanarata Fest committee, who were directly involved in the use of the 3D animated bumpers. Respondents were asked to observe and evaluate the animation results based on their user experience and suitability to the event's visual identity.

RESULT AND DISCUSSION

A. Concept

The concept stage is the initial stage in the development process of the 3D animated bumper for Wanarata Fest. At this stage, the objectives, visual messages, and basic concepts of the animation to be designed are determined. The concept formulation is based on the results of problem identification and data collection that have been carried out in the previous stage. The main objective of designing this animated bumper is to produce an opening media that is able to represent the visual identity of Wanarata Fest more professionally and consistently. The animated bumper is designed not only as an opening element for the event, but also as a visual symbol that strengthens the cultural character of Karangmangu Village.

The visual concept was a blend of traditional and modern elements. Traditional elements were embodied through the use of local cultural elements such as gunungan wayang, wayang arjuna (arjuna puppet), kuda kepang (braided horse), joglo house, and teak trees. Meanwhile, modern elements were displayed through the use of three-dimensional animation, dynamic movement, and more

contemporary visual compositions. The animation was kept to less than one minute to effectively open the event without disrupting the main event. Furthermore, the animated bumper was designed to be reused in subsequent Wanarata Fest events with minor adjustments to the informational content. The outcome of this concept stage was the formulation of a visual concept and design direction, which will serve as a reference for the storyboard design and subsequent animation production stages.

B. Design

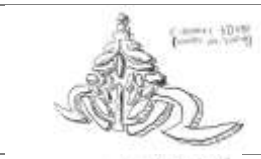
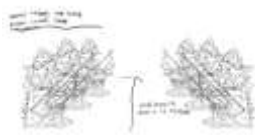
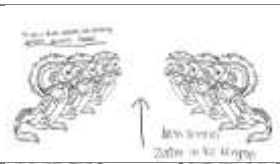
The design stage follows the concept stage, which focused on the visual design and flow of the 3D animated bumper. At this stage, the previously established basic concept is translated into a visual design that includes the animation flow, storyboard, and the selection of supporting visual elements, such as color and visual style, which are used consistently throughout the animation.

In the design stage, the selection of visual elements in the storyboard was based on observations and discussions with Karangmangu Village and the event committee. The use of these visual elements serves not only as decoration but also as a visual identity that represents the character of Karangmangu Village. The gunungan wayang element is interpreted as a symbol of traditional Javanese cultural values and philosophy, as is the wayang Arjuna, known as a knightly figure who is clever, brave, and possesses noble character. Its use in this animation symbolizes the spirit of the Karangmangu Village community, who are resilient in preserving their culture through the Wanarata Fest, while the kuda kepang (horse-drawn carriage) represents the local folk art. The silhouette of a traditional Javanese house is used to depict the local architectural identity, while the teak tree element represents the pristine state of Karangmangu Tourism Village. Therefore, each element in the storyboard has a related meaning. The goal is to reinforce the distinctive character of Wanarata Fest as an event based on regional culture.

The design process begins with the creation of a storyboard as the primary reference for determining scene sequence, camera movements, visual transitions, and animation duration. The storyboard is designed to gradually build a visual flow, starting with the introduction of cultural nuances and then emphasizing Wanarata Fest's visual identity. This 3D animated bumper is designed to be approximately 24 seconds long and includes several key scenes: an opening scene, an event identity scene, and a closing scene.

Table 1. Story Board Design

Scene	Sketch	Duration	Description
1		00.00.02	Visual: Zoom in on the Wanarata Fest logo with a 3D effect Camera: Fixed angle Transition: Fade zoom in Audio: Javanese gamelan sounds
2		00.00.05	Visual: 3D animation of the logo from a side angle, followed by a quick transition Camera: Cinematic view Transition: Fade zoom in Audio: Javanese gamelan sounds
3		00.00.07	Visual: Cinematic 3D logo from bottom to top, followed by a transition Camera: Cinematic view Transition: Fade zoom in Audio: Javanese gamelan sounds

4		00.00.10	Visual: Wayang gunungan appears from the side with a shaking animation, the camera zooms in to the center Camera: Zoom in Audio: Javanese gamelan sounds
5		00.00.12	Visual: Kuda kepang appears from the side with a shaking animation, the camera zooms in to the center Camera: Zoom in Transition: Fade zoom in Audio: Javanese gamelan sounds
6		00.00.15	Visual: A border with an elegant traditional theme appears, and wayang Gunungan and horse braided beside it. After that, a quick transition. Camera: Fixed angle Audio: Javanese gamelan sounds
7		00.00.18	Visual: A border with an elegant traditional theme appears, and wayang Gunungan and horse braided beside it. After that, a quick transition. Camera: Fixed angle Audio: Javanese gamelan sounds
7		00.00.20	Visual: The logo and shimmering 3D text appear. Camera: Fixed angle Audio: Javanese gamelan sounds
8		00.00.22	Visual: The border disappears, then the logo animation closes. Camera: Fixed angle Audio: Gamelan sounds
9		00.00.24	Visual: The border disappears, then the logo animation closes. Camera: Fixed angle Audio: Gamelan sounds

C. Material Collecting

This stage involves gathering all the materials and supporting assets used in editing the Wanarata Fest 3D bumper animation. This stage aims to ensure that the visual and audio elements align with the concept discussed with the Committee and Village Officials, which aims to present the identity and cultural character of Karangmangu Culture.

The materials obtained in this phase consist of audio and visual elements. The sound element used consists of a formal and majestic musical accompaniment, reminiscent of the atmosphere at an awards ceremony. This music aims to reinforce the initial impression of the performance and complement the visual appearance of the animation. The sound material was obtained from Maxko Music (maxkomusic.com), a website that provides free audio. All materials collected in this step will be used as the main material for creating the bumper animation in the next stage.

The visual elements implemented are in accordance with the storyboard and include the Wanarata Fest logo, which serves as the event's main identity; cultural elements such as the gunungan wayang (wayang puppets) and kuda kepang (horses), which depict traditional arts; and the silhouettes of joglo houses and teak trees, which represent local wisdom and village character. In

addition, there are border elements with a luxurious and traditional touch that act as visual frames to highlight the elegant and professional impression of the bumper animation.

Figure 2. Assets Collecting

D. Assembly

The assembly phase is the process of processing all the collected visual and audio materials into a complete 3D bumper animation. This process is carried out according to the previously approved sketch concept and design, ensuring that each visual and animated element is strongly connected to the Wanarata Fest identity.

The assembly process begins with processing assets and arranging visual elements in the three-dimensional animation space. In this phase, key assets such as the wayang gunungan (shadow puppets), the Wanarata Fest logo, and supporting elements are placed and arranged to create a visual composition with depth. This arrangement aims to prevent the animation from appearing flat and to create a more realistic visual impression.

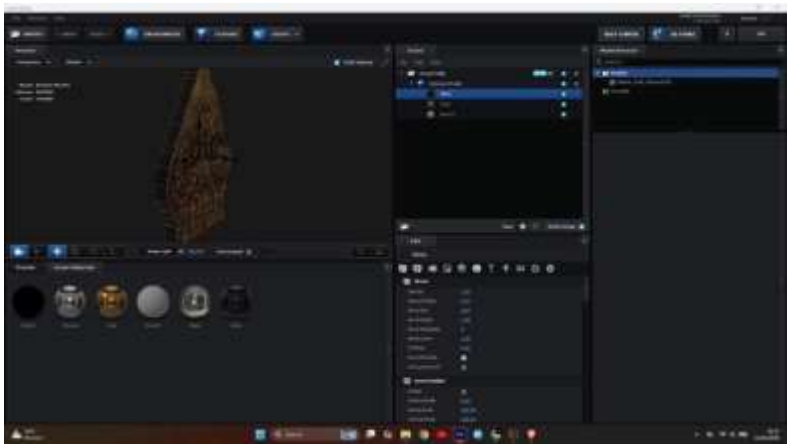


Figure 3. The Process of Adding 3D Effects

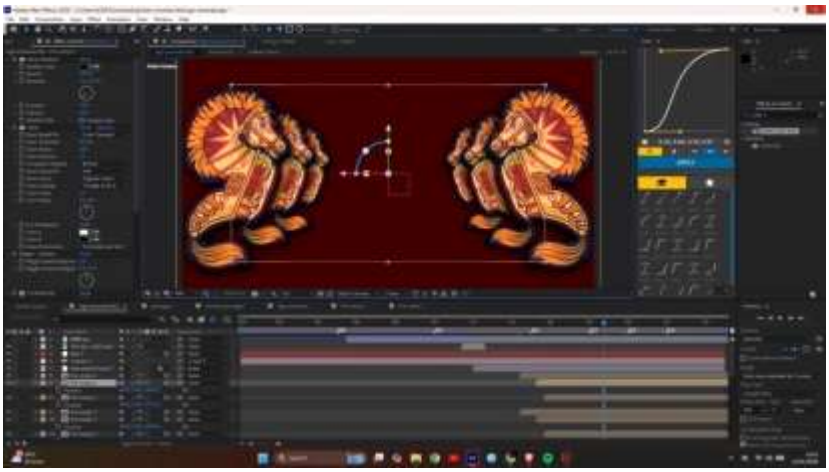


Figure 4. Adding Movement to Assets

User Acceptance Testing (UAT) was conducted on Monday, January 19, 2025, at Wanarata Edupark in Karangmangu Village at approximately 2:00 PM WIB (Western Indonesian Time). The testing process involved simultaneously displaying 3D bumper animations to respondents. Respondents were then asked to provide an assessment based on a list of statements compiled on a UAT assessment sheet. User Acceptance Testing (UAT) was conducted to determine the level of user acceptance of the designed 3D bumper animations for Wanarata Fest. This testing involved 11 respondents, consisting of the organizing committee and Karangmangu Village officials. The test consisted of a questionnaire consisting of nine indicators based on the alignment of the research objectives with the actual needs of the village and event committee during the observation and interview stages. These indicators were directly derived from the research problem formulation to measure the cultural representation of Karangmangu Village and its sustainability aspects.

These nine questions covered aspects of visual identity representation, cultural element suitability, message clarity, visual aesthetics, display comfort, and the potential for reuse of the animations in future Wanarata Fest events. A 4-point Likert scale was used. The following is a list of the questionnaire indicators.

Table 2. UAT Questionnaire Question Table

No	Code	Question
1.	P1	The animation reflects the identity of Wanarata Fest.
2.	P2	The visual elements align with the culture and character of Karangmangu Village.
3.	P3	The information in the animation is easy to understand.
4.	P4	The animation's duration is appropriate for an event opener.
5.	P5	The animation's visuals are engaging and engaging.
6.	P6	The animation's movements and transitions are smooth and comfortable to watch.
7.	P7	The animation is suitable for use as an event opener.
8.	P8	The animation enhances the image and professionalism of the event.
9.	P9	The animation has the potential to be reused in future editions of Wanarata Fest.

After the questionnaire data was obtained, calculations were performed using the formula.

a. First Question Indicator (P1)

For the first indicator, the total score was 44. The average score was calculated as 44/11 = 4.00, and the percentage value was 4.00/4 x 100 = 100%. These results indicate that the first indicator falls into the Very Appropriate category.

b. Second Question Indicator (P2)

The second indicator scored 43. The average score was calculated as 43/11 = 3.91, and the percentage value was 3.91/4 x 100 = 97.75%. Based on the assessment criteria, this indicator falls into the Very Appropriate category.

c. Third Question Indicator (P3)

For the third indicator, the total score was 44. The average score was 4.00 and the percentage value was 4.00/4 x 100 = 100%. Therefore, this indicator falls into the Very Appropriate category.

d. Fourth Question Indicator (P4)

The fourth indicator received a total score of 43. The average score was calculated as 3.91, and the percentage score was 3.91/4 x 100 = 97.75%. This result indicates a Very Appropriate category.

e. Fifth Question Indicator (P5)

The fifth indicator received a total score of 44. The average score was 4.00 and the percentage score was 4.00/4 x 100 = 100%, making it a Very Appropriate category.

f. Sixth Question Indicator (P6)

The sixth indicator received a total score of 42. The average score was calculated as 42/11 = 3.82, and the percentage score was 3.82/4 x 100 = 95.5%. Based on the UAT criteria, this indicator falls into the Very Appropriate category.

g. Indicator Question Seven (P7)

The seventh indicator obtained a total score of 44. The average score was 4.00 and the percentage score was 4.00/4 x 100 = 100%, thus falling into the Very Appropriate category.

h. Indicator Question Eight (P8)

The eighth indicator obtained a total score of 44. The average score was 4.00 and the percentage score was 4.00/4 x 100 = 100%, thus falling into the Very Appropriate category.

i. Indicator Question Nine (P9)

The ninth indicator obtained a total score of 44. The average score was 4.00 and the percentage score was 4.00/4 x 100 = 100%, indicating the Very Appropriate category.

Table 3. UAT Recapitulation and Calculation

Kode	Score	Respondens	X-Average	Percentage	Category
P1	44	11	4,00	100%	Very Appropriate
P2	43	11	3,91	97,75%	Very Appropriate
P3	44	11	4,00	100%	Very Appropriate
P4	43	11	3,91	97,75%	Very Appropriate
P5	44	11	4,00	100%	Very Appropriate
P6	42	11	3,82	95,5%	Very Appropriate
P7	44	11	4,00	100%	Very Appropriate
P8	44	11	4,00	100%	Very Appropriate
P9	44	11	4,00	100%	Very Appropriate

To calculate the overall average is 4.00 + 3.91 + 4.00 + 3.91 + 4.00 + 3.82 + 4.00 + 4.00 + 4.00 = 35.64 / 9 = 3.96 based on these results then the category is very appropriate with an average percentage of 99%. This shows that the Wanarata Fest 3D bumper animation can be very well received by users and is considered to have met the aspects of visual identity, aesthetics, clarity of message, and is suitable for use as an opening media for the event and also has the potential to be used again at the next event.

The discussion focused on understanding the User Acceptance Testing (UAT) results for the Wanarata Fest 3D bumper animation as a visual identity medium. After testing and evaluation, the UAT results indicated that all assessment indicators were in the "very appropriate" category, indicating a very good level of acceptance by respondents of the designed animation.

The alignment of the visual identity was evident in respondents' assessments of the animation's ability to represent the character of Wanarata Fest and the philosophy of Karangmangu Village.

Examples of assets used included the event logo and additional ornaments such as the gunungan kuda kepang puppet show, the joglo house, and the teak tree, which were deemed to enhance the event's value and differentiate it from previous events. This demonstrated that the visual concept aligned with the design's objectives as a visual identity medium.

In terms of message clarity and aesthetics, respondents considered the animation easy to understand, harmonious in composition, and comfortable to watch as an opening medium. The animation's smooth movement and appropriate duration also supported the user's visual experience, enabling the animation to function effectively as an attention-grabbing opening.

Furthermore, the high scores for the feasibility and potential for reuse indicators indicate that the designed 3D bumper animation is not only suitable for a single event but also has the flexibility to be reused in subsequent editions of Wanarata Fest with certain adjustments. This finding confirms that the design meets user needs and research objectives.

Overall, the UAT results demonstrate that the Wanarata Fest 3D bumper animation is highly suitable for use as a visual identity medium. These results provide a strong basis for confirming that the animation design successfully addressed the research questions and achieved the stated objectives. The next stage is the distribution or handover of the final product to Karangmangu Village and the Wanarata Fest committee. The validated 3D bumper animation will be submitted in a ready-to-use video format to be used as the primary visual identity medium at future festival openings. Furthermore, because the testing results confirm the potential for continued use, this media will be stored as a village digital asset that can be reused in subsequent festival editions with minor adjustments as needed.

CONCLUTIONS

Based on the design, testing, and discussion of the 3D animated bumper for Wanarata Fest, it can be concluded that the 3D animated bumper was successfully designed as a visual identity for the event, presenting the character, distinctive features, and cultural values of Karangmangu Village. The visual elements used in this animation, such as the logo and cultural symbols of Karangmangu Village, such as the wayang gunungan (shadow puppet mountain), the horse-drawn carriage, the joglo house, and the teak tree, created a distinctive and recognizable image for the event.

User Acceptance Testing (UAT) results indicated that the 3D animated bumper received excellent user acceptance. All assessment indicators were in the "very appropriate" category, indicating that the animation was deemed appropriate for the village's conditions, visual identity, message clarity, aesthetics, and visual comfort as an opening medium. In addition to these suitability criteria, the UAT results also indicated that the 3D animated bumper has the potential to be reused in future Wanarata Fest events with necessary adjustments to meet the event's needs.

Thus, it can be concluded that the Wanarata Fest 3D bumper animation is very suitable for use as a visual identity medium and event opening media. The results of this study indicate that designing a 3D bumper animation can be an effective visual solution in supporting the image and professionalism of the Wanarata Fest organization.

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Author Contributions

M.F.A, Project Initiation, Modeling, Writing, D.N.A, Promotor, Initiation Project, Design Model.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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